

RADIO COMMUNICATIONS ENGINEER

DISTINGUISHING FEATURES

The fundamental reason the Communications Engineer exists is to manage the City's radio communications systems and perform highly skilled work in installing, maintaining testing and repairing a wide variety of electronic, radio and digital communications equipment and associated systems for the City's Police, Fire and other departments. Responsible for the overall operation and maintenance of the City's radio systems and serves as the point of contact to all radio users for technical support, equipment recommendations and radio system complaints. In addition, performs engineering duties and works with City Staff on wireless communications systems projects that include engineering studies involving equipment and applications. This classification may be supervisory. Work is performed under general supervision by the Police Technology Director in the Information Systems Department.

ESSENTIAL FUNCTIONS

Selects and develops new communication sites by locating sites, conducting radio surveys, filing documents, drawing up documents for approval, drafting construction drawings, and following through to approval in order to provide required public safety communications systems for city.

Prepares radio propagation charts for internal and external client agencies to depict radio coverage on existing or test sites of interest.

Coordinates frequency usages and site impact specifications with client agencies to assure continued availability to meet user needs.

Plans, designs, engineers, and constructs telecommunications systems (e.g. radio, network, data, microwave, etc.).

Ascertains that Federal Communication Commission requirements regarding licensing, operating, and technical performance of radio equipment are met.

Makes frequent checks of equipment, including checks on test instruments, for preventative maintenance and to comply with FCC regulations.

Maintains and analyzes radio communications equipment inventory used by city and client agencies to determine quantities needed by age, make, user, and other qualifiers, and determine base information for equipment replacement issues.

Researches federal, state, and local laws, rules, regulations, ordinances, policies, and procedures to ensure compliance by city and client agencies in the provision of telecommunications systems, and ensure systems are operated within the legal parameters.

Coordinates the engineering of a citywide multi-agency telecommunications network including microwave, land mobile radio, and user terminals.

Analyzes telecommunications problems and needs (e.g. interference, intelligibility, clarity, etc.) to determine the most appropriate means of reducing, eliminating, and/or avoiding current and future problems and improve communications.

Coordinates and monitors programs and projects to track effectiveness, ensure efficient and timely completion, and maintain compliance with Federal Communications Commission (FCC) regulations and other applicable federal and state laws, and City policies and procedures. Inspects facilities and equipment.

Drafts bid specifications and requests for proposal, and evaluate vendor responses to establish contracts.

Manages radio communications maintenance contracts; and ensures compliance contract specifications and related agreements and provisions.

May supervise staff by establishing performance measures, goals, objectives and priorities, providing direction and feedback, and reviewing work in progress and final products.

Interacts with co-workers, city employees, vendors, the general public and representatives of other agencies (e.g., federal, state, county, city, etc.) to obtain and disseminate information, advise on projects, resolve conflicts, set priorities, coordinate activities, complete projects within time and budget constraints, and provide assistance.

Prepares written documents (e.g. bulletins, newsletters, reports, job aids, position papers, correspondence, etc.) to inform and update employees, management, clients, and regulatory agents of new or revised information.

MINIMUM QUALIFICATIONS

Knowledge, Skills & Abilities:

Knowledge of:

Principles, practices, methods, terminology, and trends in communications engineering including the fields of radio frequency allocations, electromagnetic wave propagation and radio frequency field strength measurements and tolerances.

Radio theory, programming formats and protocols, and radio frequency propagation for trunked radio and mobile data systems.

FCC rules and regulations.

Principles and practices of supervision.

Ability to:

Engineer new systems for proper operation with existing equipment and systems.

Interpret and apply blueprints, drawings, complex schematics, and technical manuals.

Use sophisticated test equipment (e.g. multi-meters for measuring current, voltage, and resistance; oscilloscope for measuring waveforms in time domain; spectrum analyzer for measuring spectral content, etc.).

Manage and direct projects that are complex and involve multiple departments, suppliers, vendors, and resources.

Communicate orally with customers, clients, or the public in face-to-face, one-to-one settings, in group settings, or using a telephone.

Produce written documents with clearly organized thoughts using proper English sentence construction, punctuation, and grammar.

Manage the overall radio communications system.

Read and understand written technical materials.

Plan for and coordinate the implementation and integration of new systems.

Identify and resolve installation problems of equipment and to install, maintain, modify, and repair such equipment.

Conduct studies, analyze situations accurately, draw valid conclusions and adopt an effective course of action.

Observe, compare, or monitor data to determine compliance with prescribed operating or safety standards.

Track, analyze and project financial data.

Evaluate system needs and requirements to recommend pricing and equipment.

Operate standard office equipment including a personal computer using program applications appropriate to assigned duties.

Establish and maintain effective working relationships with other employees and the general public.

Perform a wide variety of duties and responsibilities with accuracy and speed under the pressure of time-sensitive deadlines.

Maintain regular consistent attendance and punctuality.

Education & Experience

Four years of professional electrical, electronic, or communications engineering experience involving the design, installation, and maintenance of electronic communications systems and equipment and a bachelor's degree in electrical, electronic, or communications engineering. Other combinations of experience and education that meet the minimum requirements may be substituted.

FLSA Status: Unclassified

HR Ordinance Status: Unclassified